

CLEAN COPY OF THE CLAIMS

1. (first amended) A rear gate opening and closing apparatus for automatically opening and closing a rear gate of a vehicle, comprising:

a power source unit⁴⁰ for producing^{that} a power to actuate said rear gate;^{es}

a slider⁴⁵ for transforming^{that} said power into a reciprocating motion and traveling in the longitudinal direction of said vehicle;

a hinge arm²³ provided for attachment at the upper end of said rear gate for pivotally connected with said vehicle body;

a connecting rod⁴⁶ for interlocking between said slider and said hinge arm^{say rod} and for transmitting said reciprocating motion to said hinge arm;

a mounting base³² for supporting said power source unit and said slider;

a mounting base installer^{32 a-c} for detachably installing said mounting base in a space formed by a rear rail, a side rail and an under roof of said vehicle; and

a gas stay³² extending in the longitudinal direction of said vehicle, rotatably^{attachable} connected to said side rail at one end thereof and said hinge arm^{attached to} at the other end thereof, and disposed at

^{Substantially} approximately the same height as and in parallel with said connecting rod^{thought movement of said hinge arm} for biasing said rear gate in an opening direction.

2. (first amended) The apparatus according to claim 1, wherein

said mounting base is partly installable on a brace extending in the transverse direction of said vehicle.

3. (first amended) The apparatus according to claim 1, further comprising:

a clutch for disconnecting said power source with said slider so as to enable an operator to open or close said rear gate by hand.

AMENDMENT

Serial No: 09/752,564

Sub
c27

4. (first amended) The apparatus according to claim 1, further comprising
a position detector for detecting a position of said rear gate and for outputting a detection
signal thereof;
a manipulator for operating an opening and closing motion of said rear gate; and
a controller for controlling said power source for actuating said rear gate so as to
automatically open and close said rear gate based on an operating signal from said position
detector.

Wick
Con't

5. (first amended) The apparatus according to claim 4, wherein
said controller controls said power source for actuating said rear gate so as to control an
opening and closing speed of said rear gate based on an operating signal from said position
detector.

6. (first amended) The apparatus according to claim 4, wherein
said controller controls said power source for actuating said rear gate so as to vary an
opening speed so that the rotation in an opening direction is assisted when said rear gate is in a
self closing zone and the rotation in an opening direction is restricted when said rear gate is in a
self opening zone.

Sub
B27

7. (first amended) The apparatus according to claim 4, wherein
said controller controls said power source for actuating said rear gate so as to vary a
closing speed so that the rear gate is rotated in a closing direction against a biasing force of said
gas stay when said rear gate is in a self opening zone and the rotation in a closing direction is
restricted when said rear gate is in a self closing zone.

AMENDMENT

Serial No: 09/752,564

8. (first amended) The apparatus according to claim 4, wherein

said controller judges based on said detection signal from said position detector a fully opened or closed condition of said rear gate.

9. (first amended) The apparatus according to claim 4, wherein

said controller judges based on a load of said power source unit a fully opened or closed condition of said rear gate.

11. (first amended) The apparatus according to claim 4, wherein

said controller judges whether or not the opening and closing operation is performed automatically based on a speed of said rear gate at which said rear gate is manually operated, when the speed of said rear gate at which said rear gate is manually operated is within a specified speed range, said controller judges that the opening and closing operation is performed automatically.

14. (new) A vehicle having an apparatus for automatically opening and closing a rear gate of said vehicle, comprising:

a drive unit installed in a space formed by a rear rail, a side rail and an under roof of said vehicle, said drive unit producing a power to actuate said rear gate;

a hinge arm rotatably attached to a vehicle body for rotatably supporting said rear gate;

a connecting rod connected to said drive unit and said hinge arm for transmitting the power of said drive unit to said hinge arm so as to rotate said hinge arm; and

a gas stay connected to said hinge arm at the end thereof and said side rail at the other end thereof for biasing said rear gate in an opening direction so as to assist the operation of said drive unit, said gas spring being disposed at approximately the same height as and in parallel with said connecting rod ^{substantially} ~~with~~ ^{throughout the movement of said gate} extending in a longitudinal direction of said vehicle.

AMENDMENT

Serial No: 09/752,564

DI copy 15. (new) The vehicle according to claim 14, wherein:

said drive unit includes

a power unit module for producing the power,

a mounting base for supporting said power unit module and adapted to be attached to said rear rail, said side rail and said under roof, and

23X a slider connected to said connecting rod and said power unit, and traveling in said longitudinal direction along said mounting base based on the power of said power unit module.

16. (new) The vehicle according to claim 14, wherein:

said drive unit includes an attachment for installing said drive unit on a reinforcement member provided under said roof panel.

AMENDMENT
Serial No: 09/752,564

CLEAN COPY OF THE PARAGRAPHS

Please rewrite the paragraphs as follows:

The paragraph beginning at page 1, line 12:

a5 -- As shown in Fig. 11, generally a rear gate 102 disposed in the rear of a vehicle is a lid swinging up and down for opening and closing an opening 101. The rear gate 102 is at the upper end thereof secured to a hinge arm 103 rotatably supported by an upper edge of the opening 101 of a vehicle body 100. --

The paragraph beginning at page 2, line 16:

a6 -- According to the rear gate structure shown in Fig. 11, the gas stay 105 laid between the rear gate 102 and the side edge 104a provides an assist force when the rear gate 102 operates to open or closed and as a result the operating effort of the rear gate 102 can be reduced.--

The paragraph beginning at page 2, line 21:

a7 -- Referring to Fig. 12, when the rear gate 112 is wings upward, the hinge arm 113 rotates integrally with the rear gate 112 around the pivoting point P. Then, since the coil spring 119 pushes the curved section 114, a rotating force is applied to the hinge arm 113, thereby the operating effort when opening the rear gate 112 can be reduced.--

The paragraph beginning at page 8, line 19:

sub D3
a8 -- The opening and closing apparatus 30 has the drive unit 31 and a gas stay apparatus 50 for assisting the operation of the drive unit 31. As shown in Figs 2 and 4, the drive unit 31 is provided with a mounting base 32 having a base plate 32A with a slot 32a longitudinally spaced, a rear flange 32b and a side flange 32c for reinforcing the base plate 32A. --

The paragraph beginning at page 12, line 22:

AMENDMENT

Serial No: 09/752,564

a9 -- The gas spring 51 is rotatably connected at one end thereof with a bracket 53 secured to the side rail 16 through a ball joint 54 and is also rotatably connected with at the other end thereof, that is, an end of a position rod 51a, with the gas stay connection section 27 of the hinge arm 23 through a ball joint 55. --
